

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 181 947 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
28.08.2002 Bulletin 2002/35

(51) Int Cl.7: **A61N 1/05**

(43) Date of publication A2:
27.02.2002 Bulletin 2002/09

(21) Application number: **01119553.4**

(22) Date of filing: **14.08.2001**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE TR**
Designated Extension States:
AL LT LV MK RO SI

(71) Applicant: **Borkan, William N.**
North Miami Beach, Florida 33160 (US)

(72) Inventor: **Borkan, William N.**
North Miami Beach, Florida 33160 (US)

(30) Priority: **17.08.2000 US 225732 P**

(74) Representative: **Strehl Schübel-Hopf & Partner**
Maximilianstrasse 54
80538 München (DE)

(54) Spinal cord stimulation leads

(57) Various stimulation catheters are disclosed to lie along and stimulate tissue. The electrodes on the leads are various sizes to conserve the battery as well

as allowing a more defined area of stimulation. It may also include multiple channels or passages for delivery of drugs, thermal or photonic energy.

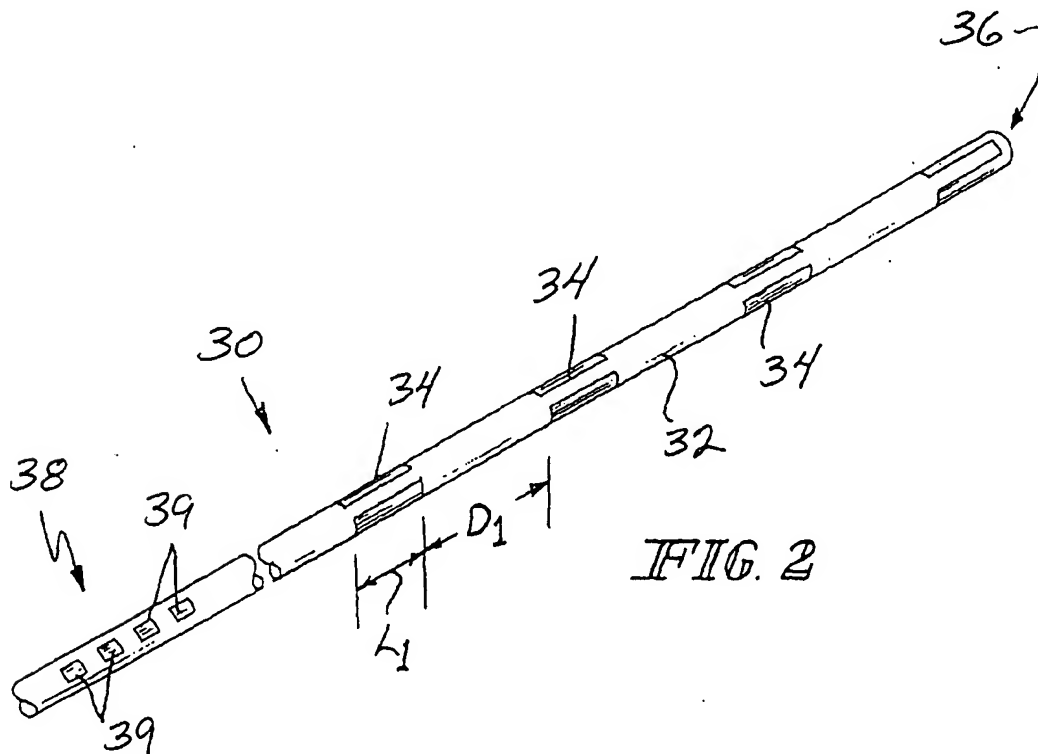


FIG. 2

EP 1 181 947 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 01 11 9553

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 5 423 877 A (MACKEY DAVID C) 13 June 1995 (1995-06-13) * the whole document *	1,2,4,5,19	A61N1/05
X	US 5 649 970 A (LOEB GERALD E ET AL) 22 July 1997 (1997-07-22) * the whole document *	1,8,9,11-13,17-19	
D,A	US 4 612 934 A (BORKAN WILLIAM N) 23 September 1986 (1986-09-23) * the whole document *	1-22	
D,A	US 4 459 989 A (BORKAN WILLIAM N) 17 July 1984 (1984-07-17) * the whole document *	1-22	
D,A	US 3 727 616 A (LENZKES H) 17 April 1973 (1973-04-17) * the whole document *	1-22	
D,A	US 3 449 768 A (DOYLE JAMES H) 17 June 1969 (1969-06-17) * the whole document *	1-22	TECHNICAL FIELDS SEARCHED (Int.Cl.7) A61N
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 5 July 2002	Examiner Kurze, V
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.82 (P4C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 11 9553

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

05-07-2002

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 5423877	A	13-06-1995	NONE		
US 5649970	A	22-07-1997	NONE		
US 4612934	A	23-09-1986	US	4459989 A	17-07-1984
			CA	1259664 A1	19-09-1989
			DE	3274804 D1	05-02-1987
			EP	0072611 A1	23-02-1983
			US	4793353 A	27-12-1988
US 4459989	A	17-07-1984	CA	1259664 A1	19-09-1989
			DE	3274804 D1	05-02-1987
			EP	0072611 A1	23-02-1983
			US	4612934 A	23-09-1986
			US	4793353 A	27-12-1988
US 3727616	A	17-04-1973	NONE		
US 3449768	A	17-06-1969	NONE		

EPO FORM P0458

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

THIS PAGE BLANK (USPTO)